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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,431	09/27/2001	William Zahavi	EMC-01-160	3626
24227	7590	10/21/2005	EXAMINER	
EMC CORPORATION OFFICE OF THE GENERAL COUNSEL 176 SOUTH STREET HOPKINTON, MA 01748			BRAGDON, REGINALD GLENWOOD	
			ART UNIT	PAPER NUMBER
			2185	
DATE MAILED: 10/21/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/965,431

Applicant(s)

ZAHAVI, WILLIAM

Examiner

Reginald G. Bragdon

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-15 and 17-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-37 is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-15 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 5-9 and 17-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                         |                                                                             |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____                                                             | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings were received on 12 September 2005. The drawing corrections to figures 11, 13, 16, and 20 are approved by the Examiner.

2. The drawings are objected to because:

There is no element “510” in figure 3 (see page 12, line 14). Instead there is an element “580”.

In figures 6, 13, 15, , should “RAID-S” be --RAID-5--?

“RAID-1” is not shown as being selected in figure 15 (see page 17, line 16).

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The disclosure is objected to because of the following informalities:

On page 13, line 12, and figure 3, should "RAID-S" be --RAID-5--?

On page 16, line 22, should "RAID-S" be --RAID-5--?

Appropriate correction is required.

***Terminal Disclaimer***

5. The terminal disclaimer filed on 12 September 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on application number 10/180,716 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2, 10-14 and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Frazier (6,078,990).

As per claims 1 and 13, Frazier teaches a RAID configuration interface (“presenting a user interface”). See figures 12-15. “Location information” box 1222 includes radio buttons 1224 for ION characteristics, including the percent utilized (“receiving information related to workload characteristics”). See column 43, lines 50-55, and column 44, lines 6-14 and 40-43. Caching options can be selected by the administrator (“receiving information related to...performance characteristics”). See column 43, lines 33-46, and column 44, lines 40-43. Based on at least the caching options, ION characteristics, and RAID level volume sets are created and displayed for the user (“presenting storage configuration information for the data storage system that is based on these characteristics through the user interface”). See column 43, lines 4-8 and 62-65. Frazier teaches establishing read and write caching options for data within the VSI (“the performance characteristics include read and write characteristics associated with data to be stored on the data storage system”). See figures 13 and 15.

As per claims 2 and 14, Frazier teaches a box 1316 (figure 14) which displays the VSI and the related sizes. See column 44, lines 16-19.

As per claims 10 and 22, Frazier teach a user settable read ahead caching value (figure 13, element 1214, and figure 15), which represents a “user provided performance comfort zone”.

As per claims 11-12 and 23-24, Frazier teaches selecting a VSI RAID level (1108 in figure 12), where RAID is a data protection scheme. See column 42, line 67.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier in view of Voight et al. (5,623,598).

As per claims 3 and 15, Frazier does not teach that the workload characteristics include I/O operations per unit time Voight et al. teaches a user interface 100 which indicates the I/O access activity per second (“presenting information related to workload characteristics”) and the RAID level. See column 6, lines 15-20. Based on the collective performance history data (see figure 3, step 58), performance planning suggestions, including information about drive, cache, and DRAM configuration are set forth through the interface (figure 6 and figure 3, steps 68 and 70). Voight et al. teaches that the performance history data includes I/O access activity per second (“IO operations per unit time”). See column 6 lines 18-19. It would have been obvious to one of ordinary skill in the art to have modified Frazier to receive information related to the I/O access activity per second as a workload characteristic, as taught by Voight et al., because Voight et al. teaches that I/O access activity is one system performance characteristic that can be used to evaluate system performance, thereby improving performance of the data storage systems (see column 2, lines 21-26).

***Allowable Subject Matter***

10. Claims 25-37 are allowed.

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11. Claims 5-9 and 17-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

12. Applicant's arguments filed 12 September 2005 have been fully considered but they are not persuasive.

Applicant argues that Frazier does not teach “receiving information related to performance characteristics which include read and write characteristics associated with data”, instead teaching creating an optimization choice without knowledge of any read or write characteristics associated with data. This is not persuasive. Applicant appears to be attempting to give the phrase “associated with data” in the claims a narrower interpretation than warranted by the actual language in the claims. However, a broad interpretation of the claim language is taught by Frazier, which teaches establishing read and write caching options for data (figure 13 and 15). The establishment of read and write caching options (e.g. sequential or random read optimization, LIFO caching, read ahead parameters, sequential or random write optimization, write-thru or write-back caching) are, broadly, read and/or write performance characteristics of data to be stored. For example, data to be written can have the performance characteristic that the data is “written back” or “written thru”.

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



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14. Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

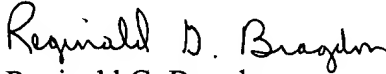
All "OFFICIAL" patent application related correspondence transmitted by FAX must be directed to the central FAX number at **(571) 273-8300**:

"INFORMAL" or "DRAFT" FAX communications may be sent to the Examiner at **(571) 273-4204**, only after approval by the Examiner.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reginald G. Bragdon whose telephone number is (571) 272-4204. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and every other Friday from 7:00 AM to 3:30 PM.

The examiner's supervisor, Mano Padmanabhan, can be reached at (571) 272-4210.

RGB  
October 18, 2005

  
Reginald G. Bragdon  
Primary Patent Examiner  
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